PRIMARY TUMOR OF THE VELUM, WITH MARKED COMPRESSION OF THE FOURTH VENTRICLE.

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The patient was a girl, aged eleven years. She first came under the observation of Dr. J. Constantine MacGuire, to whom I am indebted for the history and most of the clinical notes of the case. The child was born of nervous and excitable parents, and from early life had been the witness of constant domestic disturbances, so that the nervous condition that she presented had been looked upon as fully accounted for. She had suffered from various diseases of infancy, and had always been considered frail, although of about normal size and development for her age. Previous to coming under the care of Dr. MacGuire she had been ill for two weeks, suffering from a condition diagnosed as "brain fever."

On examination she showed general muscular rigidity of a spasmodic character, with slight opisthotonos. She rolled and tossed about the bed, was illogical, and had at times to be restrained. Occasionally she screamed and cried hysterically. She complained rather persistently of pains in the head. The knee-jerks were accentuated, there were no ocular disturbances manifest, and examination of the eye grounds was said to be negative. There was no Babinski reflex, no elevation of the temperature, and the pulse varied from rapid to slow. At this time a diagnosis of probable meningitis was made.

The child was removed from her surroundings, which were manifestly bad for her condition, and was placed under observation in a hospital. Here she was actively purged and put upon vigorous doses of the bromides. Under this treatment the symptoms apparently entirely cleared up, the muscular rigidity passed away, and the child was soon able to sit up and to walk about the ward. Mentally, the condition become apparently normal, cerebration and speech were quick and apparently natural in every way and the patient became cheerful and uncomplaining. Medical treatment was then entirely suspended, but the child remained under observation. With this startling result following treatment, naturally a diagnosis of hysteria was made.

Some days after apparent recovery a parent of the child was permitted to see her and, unknown to the attending physician, brought a detective, who sharply questioned the child as to alleged misdoings on the part of the other parent. The girl became very much distressed and excited, and shortly after this ordeal developed convulsive attacks of the same nature as those previously present, during which she soon died.

Postmortem examination shortly after death showed a practically normal condition throughout the entire body, except for the following lesions in the brain, which are quoted verbatim from the protocol: "The skull, scalp, and dura mater are entirely normal, but the bloodvessels of the pia-arachnoid are moderately injected. The markings of the brain are regular, symmetrical, and typical. The convolutions are, however, remarkably flattened, and palpation of the hemispheres shows fluctuation. On removal of the brain from the skull the infundibulum is found to be greatly distended, and, on its rupture, about 500 c.c. of clear cerebrospinal fluid escapes. The sella turcica is somewhat excavated, as a result of the infundibular distention, but the pituitary body is apparently normal. The optic chiasm is compressed by the bulging infundibulum and its bands are thinned and slightly atrophied. The foramen of Munro is greatly dilated, and on opening the lateral ventricles, they were found to be enormously distended from cerebrospinal fluid. The choroid plexuses are anemic, but otherwise apparently normal. Section through the cortical tissue of the cerebrum shows marked anemia, but otherwise, aside from compression, it is apparently normal. The cortical gray matter is normally thick and regular. Section of the pons, medulla, and cerebellum shows a large tumor mass, apparently originating from the velum, which covers in the floor of the fourth ventricle. As a result the floor of the ventricle and the superjacent substance of the cerebellum are greatly compressed, but neither tissue appears to be integrally invaded.

"On careful dissection the tumor can be readily separated from the cerebellum, but not from the floor of the fourth ventricle, where it is firmly attached by a more or less clearly defined adhesive pedicle, which covers it in almost the entire ventricular area. The tumor is flattened, oval in form, it measures 6 cm. in diameter, and 3 cm. from above downward. It is light pink in color, very soft, and almost pultaceous in consistence, but it shows no areas of gross necrosis. The superjacent cerebellum is very much compressed, but no areas of invasion or of degeneration can be made out in it. No strands of degeneration are grossly demonstrable in the tracts of the lower medulla or in the cervical cord, although the ventricle of this portion of the cord is somewhat dilated. The tumor has completely obliterated by compression the iter and the passage below connecting the medullary ventricle with that of the cord; this is doubtless the explanation of the condition of hydrocephalus."

"Microscopic examination of the tumor shows it to be composed of a diffuse mass of embryonic connective tissue cells, which are for the greater part of the small round-cell type. The stroma is very scanty and is largely composed of spindle-shaped cells which are evidently closely related to those which make up the chief mass of the tumor. Bloodvessels are infrequent, but the tumor is rich in what are apparently lymph passages. The smaller channels are composed of irregularly arranged tumor cells, and only the larger vessels show a definite structure, into which adult connective tissue and endothelium enter. Portions of the velum remain still intact in the growth, though the neoplasm has evidently sprung from the connective tissues of this structure. No direct evidence of invasion of the tissue of the cerebellum or medulla can be made out."

Histologically, I am inclined to class this tumor as a sarcoma of the small round-cell variety, but in some respects it resembles a glioma. Taking into consideration, however, its evident point of origin, I believe that I am fully justified in the assumption that the growth is a sarcoma.

From a clinical standpoint the case is chiefly interesting and remarkable in that with so marked a growth complete relief of symptoms took place from time to time. It is, of course, absurd to assume that the bromide had directly to do with this amelioration, but I am rather inclined to the idea that the cartharsis, with the mental quiet and rest which the child enjoyed after removal from her home were partly responsible for the cessation of symptoms. It is, however, possible that the inhibiting action of the bromide on the activity of the ganglion cells really may have had an effect in assisting this improvement.

Manifestly, the convulsive and irritative symptoms shown by the patient when she was first seen were due to the acute hydrocephalus. It is probable that with the rest in bed and quiet of the hospital a certain amount of absorption of this fluid, with relief of the cortical pressure, took place, as a result of which the temporary improvement noted occurred. It also seems probable that the excitement induced by the painful questioning of the sensitive child caused a cerebral hyperemia, with, perhaps, increased secretion of cerebrospinal fluid, increased cortical tension, and resulting convulsions and death.

It is extremely difficult to understand why choked disk, Babinski reflex, and other evidences of cerebral compression were absent in this case. The absence of disturbances of equilibrium with so marked cerebellar compression is truly remarkable, but no more so than the absence of respiratory and cardiac disturbances when the floor of the fourth ventricle was so universally and remarkably compressed.

In so far as I have been able to determine, the case is unique, not only in symptomatology, but also in the location and character of the tumor. As a whole, it only verifies the quaint statement said to have been made by Charcot, that "there is no lesion of the central nervous system which may not exist at times without symptoms, and there are no symptoms which may not appear without lesion."